

What is claimed:

1. A method of controlling a relative movement of a cutting blade and a workpiece which are moved relative to each other by a movement device in an operation with a machine tool, said method comprising a step of bringing said cutting blade and an object into contact with each other, by moving at least one of said cutting blade and said object toward each other by said movement device, and a step of controlling said relative movement on the basis of a relative position of said cutting blade and said object which is detected by wherein said movement device upon said contact of said cutting blade and said object with each other, said object consists of said workpiece which is fixed to said machine tool, said method further comprising:

a dimension measuring step of measuring a dimension of said workpiece on the basis of said relative position of said cutting blade and said workpiece as said object upon said contact of said cutting blade and said workpiece as said object with each other, so that said relative movement is controllable on the basis of the measured dimension of said workpiece.

2. An apparatus for controlling a relative movement of a cutting blade and a workpiece which are moved relative to each other by a movement device in an operation with a machine tool, said apparatus controlling said relative movement on the basis of a relative position of said cutting blade and an object which is detected by said movement device when said cutting blade and said object are brought into contact with each other as a result of a relative movement of said cutting blade and said object which is made by said movement device, said apparatus comprising:

a checking device which checks if a contact detecting device for detecting contact of said cutting blade and said object is in a normal condition in which said contact

detecting device detects said contact when said cutting blade and said object are brought into contact with each other; and

a contact determining device which determines that said cutting blade and said object have been brought into contact with each other, in accordance with an output provided by said contact detecting device

3. A method of detecting contact and separation of a cutting blade held by a blade holding member, with and from an object, on the basis of a change of a state of an electric circuit which is changed depending upon whether said cutting blade is in contact with said object or is separated from said object, said method comprising:

a step of bringing said cutting blade and said object into contact with each other, while a conductive layer having an electrical conductivity is provided in at least one of a space between said cutting blade and said blade holding member, and a space between said cutting blade and said object.

4. A method according to claim 3, wherein said contact and said separation are detected on the basis of transition from an open state in which an on-off circuit as said electric circuit is open, to a closed state in which said on-off circuit is closed, and wherein said on-off circuit includes at least said cutting blade, said object and a power source which are arranged in series to each other, said on-off circuit being open when said cutting blade is separated from said object while being closed when said cutting blade is in contact with said object.

5. A method according to claim 3, wherein said contact and said separation are detected on the basis of transition from an open state in which an on-off circuit is open, to a closed state in which said on-off circuit is closed, and wherein said on-off circuit includes at least said blade holding member, said cutting blade, said object and a power source which are arranged in series to each other, said on-off circuit being open when said cutting blade is

separated from said object while being closed when said cutting blade is in contact with said object.

6. A method according to claim 3, wherein said conductive layer consists of a conductive coating which covers a surface of said cutting blade.

7. A method according to claim 4, wherein said conductive layer consists of a conductive coating which covers a contact surface of said object which surface is in contact with said cutting blade.

8. A method according to claim 7, wherein said object comprises a master workpiece which has a known dimension and which is held by a workpiece holding device that is provided for holding a workpiece to be cut by said cutting blade.

9. A method according to claim 4, wherein said conductive layer consists of a conductive sheet which is positioned to be interposed between said cutting blade and said object when said cutting blade and said object are in contact with each other.

10. A method according to claim 3, wherein said cutting blade is provided by at least a cutting edge of a rotary cutting tool which is to be rotated about an axis thereof for cutting a workpiece, and an adjacent portion of said rotary cutting tool which portion is adjacent to said cutting edge,

wherein said cutting edge and said adjacent portion is covered with a conductive coating as said conductive layer, and said rotary cutting tool is brought into contact with said object while said rotary cutting tool is being rotated.

11. A method according to claim 10, wherein said rotary cutting tool is brought into contact with said object while said rotary cutting tool is being rotated at a velocity substantially equal to that at which said rotary cutting tool is rotated in a cutting operation for cutting said workpiece.

12. A cutting blade which is removably held by a blade holding member, for thereby cutting a workpiece, said cutting blade being covered at at least a portion of a surface thereof with a conductive coating having an electrical conductivity.

13. A cutting blade according to claim 12, wherein said conductive coating is made of a material whose electric resistance is larger than that of a material of said cutting blade.

14. A cutting blade according to claim 12, wherein said conductive coating is made of a material whose electric resistance is smaller than that of a material of said cutting blade.

15. A cutting blade according to claim 12, being covered at all the surface with said conductive coating.

16. A cutting blade according to claim 12, comprising a replaceable cutting insert which is replaceably attached to a main body of a cutting tool, said main body including a shank portion and cooperating with said replaceable cutting insert to constitute said cutting tool.

17. A cutting blade according to claim 12, comprising a cutting edge of a rotary cutting tool, and an adjacent portion of said rotary cutting tool which portion is adjacent to said cutting edge, said rotary cutting tool being rotated about an axis thereof for achieving a cutting operation.

18. A cutting blade according to claim 17, wherein said cutting edge and said adjacent portion are provided by a replaceable cutting insert which is replaceably attached to a main body of said rotary cutting tool, said main body including a shank portion and cooperating with said replaceable cutting insert to constitute said rotary cutting tool.

19. A master workpiece which is to be held by a workpiece holding device serving for holding a workpiece to be cut by a cutting blade, and which is to be brought into contact

with said cutting blade, said master workpiece having a known dimension and covered at a surface thereof with a conductive coating which has an electrical conductivity.

20. A conductive sheet consisting of a sheet member which is made a material having an electrical conductivity.